

## NEW AUSTRALIAN MYDAIDAE (DIPTERA).

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Since the review of this family by Mr. G. H. Hardy (These PROCEEDINGS, 1, 1925, 139-144), five new species have come to hand and I present here descriptions of these, together with a key to the Australian species of the family and notes on additional synonymy based on information received by Mr. Hardy from Major E. E. Austen, of the British Museum. Nearly all the material before me comes from the Macleay Museum, University of Sydney, and the types of the new species will be lodged in that Institution. It has been possible to recognize all the known species, with the exception of *Miltinus sordidus* Westw. I am indebted to Mr. A. Musgrave of the Australian Museum for material assistance in elucidating the problems presented by some of the older descriptions.

The wing venation of the Mydaiidae is rather complex and is interesting in that the disposition of the branches of media is practically identical with that of the Nemestrinidae. The "oblique vein" is present and, but for the uniform presence of r-m, has practically the same constitution; it is, however, more irregular and more transverse in position. The media of *Trichophthalma* and *Nycterimyia* figured in a previous paper (These PROCEEDINGS, 1, 1925, fig. 3a, p. 495, and fig. 15b, p. 553) corresponds very well with that of *Diochlistus* and *Miltinus* respectively. While this resemblance is striking, it cannot, I think, be used for phylogenetic purposes unless supported by other structural similarities.

The length of the antennae (principally of that part composed of the elongate third segment) offers a useful character for subdivision within the genera. These groups appear on other grounds to be natural ones and the distinction between species with long antennae and those with short antennae is sharply defined in both genera, with the single exception of *Miltinus maculipennis* Westw., which is intermediate in structure, although apparently to be allied with the species with short antennae, to which group *M. dentipennis*, n. sp., also belongs.

### Key to the Species.

1.  $M_1$  and  $M_2$  separate, i.e. two veins reaching the wing margin between  $R_3$  and the apex ..... Genus *Diochlistus* ..... 2
- $M_1$  and  $M_2$  fused, i.e. one vein reaching the wing margin between  $R_3$  and the apex ..... Genus *Miltinus* ..... 6
2. Antennae markedly elongate, third segment at least five times the length of the first and second together ..... 3
- Antennae much shorter, third segment but little longer than the first and second together ..... 5
3. Wings mostly bright orange, opaque; abdomen orange with indefinite transverse black markings towards the base ..... *D. auripennis* Westw.
- Wings brownish, transparent; abdomen with alternating black and lemon-yellow markings ..... 4
4. Face and apical half of hind femora orange to bright brown; robust species ..... *D. melleipennis* Westw.
- Face and apical half of hind femora black; smaller, more slender species ..... *D. gracilis* Macq.

5. Abdomen black, without pale bands; wings deeply suffused with dark brown ....  
..... *D. nicholsoni*, n. sp.  
Abdomen grey to black, with conspicuous, narrow, pale yellow fasciae; wings  
subhyaline ..... *D. mitis* Gerst.
6. Wings with conspicuous dark brown markings ..... 7  
Wings hyaline or more or less infuscated, never with a definite pattern ..... 8
7. Wings hyaline, with pale yellow fore margin and a single large dark brown patch  
in the centre ..... *M. maculipennis* Westw.  
Wings with the anterior two-thirds dark brown, the posterior margin of the dark  
colour being irregularly dentate ..... *M. dentipennis*, n. sp.
8. Antennae markedly elongate, third segment more than three times the length of the  
first and second together; large species ..... 9  
Antennae much shorter, third segment little more than twice the length of the first  
and second together; small, slender species ..... 13
9. Thorax and abdomen bright orange, the latter with basal and small lateral black  
markings ..... *M. cardinalis* Gerst.  
Not such species ..... 10
10. Abdomen with large and conspicuous, triangular or rounded, sublateral pale  
markings on four or more segments ..... 11  
Abdomen with narrow silvery grey basal sublateral or transverse markings on a  
variable number of segments, never broadened on more than two segments .. 12
11. Scutum entirely black; abdomen with four large, triangular, luteous lateral patches  
..... *M. sordidus* Westw.  
Scutum black with conspicuous creamy markings; abdomen with large, rounded,  
sublateral, creamy patches on all segments ..... *M. musgravei*, n. sp.
12. Abdomen with the apical half or more of the ground colour red, the remainder  
black ..... *M. stenogaster* Westw.  
Ground colour of the abdomen black, or very dark brown for its entire length ....  
..... *M. viduatus* Westw.
13. Abdomen orange, with a narrow dark brown fascia on each segment .....  
..... *M. tenuis*, n. sp.  
Abdomen black or dark brown, with small transverse silvery markings on a variable  
number of segments ..... *M. minutus*, n. sp.

## Genus DIOCHLISTUS.

## DIOCHLISTUS MELLEIPENNIS Westwood.

This species was listed by Hardy as a synonym of *D. gracilis* Macq. Austen (in lit.) pointed out that it differed from that species, a finding which is confirmed by a study of a good series of both sexes of the two forms. *Mydas clavigera* Walker, 1848, and *Mydas effracta* Walker, 1857, are synonyms.

## DIOCHLISTUS NICHOLSONI, n. sp.

A black species with short antennae and deeply infuscated wings.

♀. Head black, pale grey dusted around the eyes and on the occiput; hairs rather sparse, black, mixed with some grey behind the vertex and below the antennae. Antennae black, about two and one-half times the antero-posterior diameter of the head; first segment elongate, slender, second small and rounded, third as long as the first and second together, fourth a little longer than the third, broadly spatulate, almost rounded. Proboscis small, projecting but little beyond the oral margin.

Scutum pale grey dusted, with three broad black vittae extending throughout its length giving it a predominantly black appearance. Scutellum black. Pleurae shining black.

Legs black, tarsi brownish-black, knees bright brown. Hind femora slightly incrassate, with two ventral rows of stout bristles on the apical two-thirds.

Wings deeply suffused with dark brown, which is darkest along the veins and sometimes completely fills the cells. The colour extends from the base to a little beyond the tip of  $R_1$  and posteriorly through the bifurcation of  $M_{1+2}$  to the tip of

Cu<sub>1</sub>. The cubital and anal cells and the distal part of the wing are clear. The cell C is less deeply clouded than the wing below it.

Abdomen elongate conical, black, tomentose, with a narrow zone at the apex, and inconstantly at the base, of each segment bare and shining.

Length: body, 15 mm.; wing, 12 mm.

Holotype ♀ and one paratype ♀, Ooldea, South Australia, 18th Aug., 1926, A. J. Nicholson.

A very distinctive species which is apparently most nearly related to *D. mitis* Gerst. Named in honour of the collector.

#### Genus MILTINUS.

##### MILTINUS STENOGASTER Westwood.

*Midas stenogaster* Westwood, *Arcana Entomologica*, i, 1841, p. 53, species xxxi, Pl. 14, fig. 3. Swan River, Australia.—*Midas bicolor* Westwood, *loc. cit.*, p. 53, species xxxii, Pl. 14, fig. 4. Western Australia.

Austen found from an investigation of the types that the above two names applied to the same species, a conclusion at which I had also arrived after studying the series available to me, including a pair taken *in copula*, the male of which agreed very well with the description of *M. stenogaster*, while the female was an undoubted *M. bicolor*.

##### MILTINUS DENTIPENNIS, n. sp.

A small, slender species with short antennae and pictured wings.

♀. Head black, somewhat greasy, occiput and parafacialia pale grey dusted, hairs mainly creamy. Antennae brown, about twice as long as the antero-posterior diameter of the head; first and second segments short, the former about twice the length of the latter, third segment slender, about twice the length of the first and second together, fourth segment a little shorter than the third, stoutly pyriform with the narrow end directed basally and with a mammilliform tip. Proboscis about twice the length of the oral aperture.

Scutum dark brown tinged with russet, with the lateral and posterior margins broadly, and the scutellum entirely, bright orange brown. Pleurae shining yellowish-brown.

Legs uniformly bright yellowish-brown. Hind femora moderately incrassate, with two ventral rows of strong spines.

Wings with a dark brown pattern extending the full length of the anterior margin to the tip of M<sub>1+2</sub> and posteriorly to Cu<sub>1</sub>, with slight suffusion of the cubital and anal cells. The hind margin of the coloration is well defined and there is a hyaline indentation between the tips of Cu<sub>1</sub> and M<sub>3+4</sub> extending into the middle of the discal cell and a second clear area just distal to the composite transverse vein extending forward almost to R<sub>1</sub>; the curvature of Cu<sub>1</sub> makes a third indentation. There is a small clearer area in the brown near the tip of the appendix to R<sub>4</sub> and another below and basal to the origin of Rs.

Abdomen elongate, slender, almost parallel-sided, bright yellowish-brown in colour with the basal segment, two or three of the apical segments and a narrow transverse zone at the apex of each of the intervening segments dark brown.

Length: body, 15 mm.; wing, 10 mm.

Holotype ♀, South Australia, without further data, from the collection of the Macleay Museum. A second ♀ in the collection of the Department of Public Health is from Bright, Victoria, H. W. Davey, and is slightly larger, measuring 18.5 mm. This specimen is greasy.

*M. dentipennis* can be immediately recognized by the wing markings.



*MILTINUS MUSGRAVEI*, n. sp.

A long bodied, short winged species with long antennae and conspicuous, paired, creamy spots on the abdominal tergites.

♂. Head covered with creamy tomentum except for a small bare black area above the antennae; face prominent, pale yellow; hairing of head and face relatively long and dense, creamy in colour. First segment of antennae short, cylindrical, about three times as long as broad, second segment as long as broad, third segment (in ♀, missing in the ♂) elongate, rather more than three times the length of the first and second together, remainder of the antennae missing but the type obviously corresponds with that of *M. viduatus* Westw. and its allies. Proboscis short, not longer than the oral aperture.

Scutum black, with a series of large, oblong or irregular, dull creamy yellow patches arranged in a ring round the margin. Scutellum inconspicuous, black; post-scutellum dull cream coloured with a narrow median black vitta. Pleurae shining black, with an elongate patch of creamy tomentum below the anterior spiracle.

Legs bright brown; the hind femora are a little darker in colour, strongly incrassate and bear the usual double row of strong ventral spines.

Wings subhyaline, almost clear and without any darker suffusion.

Abdomen elongate, slender, black. Each segment except the first bears a pair of conspicuous, semicircular, dull creamy patches which enlarge progressively posteriorly and become confluent in the mid line on some of the apical segments.

Length: body, 23 mm.; wing, 15 mm.

♀. The only female before me is in poor condition, but appears to differ from the ♂ only in the somewhat duller markings on the abdomen, which is, as usual, broader and more parallel-sided, and in the wings being faintly tinged with brown.

Length: body, 25 mm.; wing, 17 mm.

Holotype ♂, allotype ♀ and one paratype ♂, all labelled South Australia, without further data, from the collection of the Macleay Museum.

The nearest relative of *M. musgravei* appears to be *M. sordidus* Westw., which I have not seen, but which differs in the original description and coloured figure in having an entirely black thorax and only four larger, differently shaped, luteous spots on the abdomen. It is just conceivable, if Westwood's description were based on an extremely greasy specimen, that this may be his species, but I think it is extremely unlikely. Named after Mr. Anthony Musgrave of the Australian Museum.

*MILTINUS TENUIS*, n. sp.

A very small, slender species with short antennae, hyaline wings, and orange abdomen which is narrowly banded with dark brown.

♀. Head shining black, grey dusted below the antennae and on the occiput; face shining orange yellow; hairs sparse and inconspicuous, grey to creamy in colour. Antennae short, the basal segments short, black, the first about twice as long as the second, third segment brown, about twice as long as the first and second together, fourth segment brown dorsally, bright orange yellow ventrally, about three-fourths the length of the third, broadly pyriform in shape with the narrow end directed basally. Proboscis about twice the length of the oral aperture.

Scutum black with the humeral and post-alar calli bright yellow; there is a pair of pale grey dusted dorsocentral vittae and a broader, paler vitta along each lateral margin. Scutellum dark brown, shining; postscutellum orange yellow, with

a narrow, indefinite, median brown vitta. Pleurae shining brown, orange yellow below the wing root.

Fore and mid legs bright yellow, hind legs more or less deeply tinged with brown; hind femora strongly incrassate.

Wings perfectly clear, without any darkening whatever.

Abdomen slender, parallel-sided, bright orange, with narrow dark brown basal and apical fasciae and lateral vittae to each segment; the bands also tend to be drawn out to form indefinite median vittae, which vary considerably in different specimens, being sometimes almost complete.

Length: body, 14 mm.; wing, 9 mm.

Holotype ♀, South Australia, without further data, from the collection of the Macleay Museum. There are other females, all apparently from the same locality, in the Macleay collection. All these are somewhat rubbed and the scutal ornamentation is consequently not well seen.

A very distinct little species on account of its slender form, clear wings, dark thorax and orange abdomen.

MILTINUS MINUTUS, n. sp.

A small, dark species, with short antennae, silvery grey vittate scutum and narrowly silvery fasciate abdomen.

♂. Head covered with silvery white tomentum contrasting strongly with the dark eyes, hairs white. Antennae dark brown, first and second segments short, the first slightly bulbous, third segment slightly more than twice the length of the first and second together, fourth about two-thirds the length of the third, stoutly pyriform, almost globular in shape. Proboscis about twice the length of the oral aperture.

Scutum dark grey, with a pair of dorsocentral greyish-white vittae which broaden out anteriorly and posteriorly, and with a broader, white dusted vitta along each lateral margin. Scutellum dark grey; post-scutellum dark grey with extensive greyish-white dusting. Pleurae dark brown.

Legs dark brown, hind femora strongly incrassate.

Wings hyaline, without darker suffusion or markings.

Abdomen brownish-black, the basal five segments with narrow silvery white bands which are evanescent in the mid line and broader laterally, where they tend almost to form a pale dusted marginal vitta. The first fascia covers the apex of the first tergite and the base of the second, the remainder are basal in position.

Length: body, 13 mm.; wing, 8 mm.

♀. Differs from the male in being more robust, of brown rather than blackish general coloration, in the wing being distinctly suffused with brown, and in the pale markings of the abdomen being fewer in number (generally three) and distinctly narrower.

Length: body, 14 mm.; wing, 10 mm.

Holotype ♂, Western Australia, Newman, and allotype ♀, South Australia, both without further data, are from the Macleay Museum.

This species might be taken for a very small form of *M. viduatus* Westw., but differs markedly from that species in the structure of the antennae.